



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

②

D3391-025
Job Sheet 184463



Part No: D3391-025

Job Qty: 1 ea

Part Name: Aft Tube Assembly



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 10/10/18

Job Tracking No:

Due Date: 12/3/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG REV J SHEETS 9,10,11 IPP Rev B 06-02-07 ECN773 dwg rev. D EC IPP Rev:C 06-03-28 Update
Manuf. Instructions JLM IPP rev D 07.03.20 revF dwg EC IPP rev E 07.11.07 rev G dwg ecn 1053p EC verified
by: DD IPP Rev:F 07-11-13 ECN 1056 DD verified by: EC IPP Rev:G 08-09-10 revH as per dwg DD verified
by:EC IPP Rev:H 11.11.14 AS PER REV.I DD verified by:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	12/3/18	12/3/18	0.00	0.00	Start Up Crosstubes		MD
100	Mori Seiki	1 pcs	12/3/18	12/3/18	2.49	4.17	Mori Seiki TL-40		MD
110	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC2-1		MD 206/10/20
112	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC5		DAS 38
120	CNC Vertical Machining	1 pcs	12/3/18	12/3/18	0.00	2.63	HAAS1-3		DIP 8-11-28
130	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC2 Machining-2		DIP 8-11-28
140	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC8 Machining-2		18/11/29
150	Skidtubes	1 pcs	12/3/18	12/3/18	0.00	1.03	Skidtubes-4		MD
160	CNC Bend Skidtubes	1 pcs	12/3/18	12/3/18	0.00	1.33	CNC Bend Skidtube		MD
170	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC5		BE
180	Skidtubes	1 pcs	12/3/18	12/3/18	0.00	1.03	Skidtubes-4		DAS 38
190	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC5		38
200	HandFinish	1 pcs	12/3/18	12/3/18	0.00	0.58	HandFinish1		D.R 18/11/30
210	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC7-2		DAS 60
220	Skidtubes	1 pcs	12/3/18	12/3/18	0.00	1.41	Skidtubes-4		9-89 38
230	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC5		9-89 38
235	HandFinish	1 pcs	12/3/18	12/3/18	0.00	0.58	HandFinish2		D.R 18/12/6
240	SprayPaint	1 pcs	12/3/18	12/3/18	0.00	0.25	Spray Paint		NK
242	Outsource	1 pcs	12/3/18	12/3/18			ATE003-VC	DEC 17 2018	18/12/12
250	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC14		18/12/18
260	HandFinish	1 pcs	12/3/18	12/3/18	0.00	0.58	HandFinish4		18/12/18
270	QC	1 pcs	12/3/18	12/3/18	0.00	0.00	QC5		18/12/18
280	Packaging	1 pcs	12/3/18	12/3/18	0.00	0.00	Packaging3-1		40 JAN 02 2019
290	QC21-SA	1 Ea	12/3/18	12/3/18	0.00	0.00	QC21		9-89 JAN 02 2019

Part Op 100 - Turn as per Folio FA599 Rev: J & Dwg D3391 Rev: J ***ensure steady rest is turning true*** REMOVE
Descriptions: STEADY REST AND MACHINIG MARKS***

120 - 1-Machine as per Folio FA 599 Rev: J & Dwg D3391 Rev: J

140 - ***INSPECT INSIDE BORE***

150 - 1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

160 - Form as per Dwg D3391 Using Bend Prog 3391025

180 - 1-Open Aft cap pilot hole to .208" as per Dwg D3391 2-Drill float bag holes using DT8809 as per Dwg D3391(Holes

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																		
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																		
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																		
Large Fab ☐	Composite ☐	Supplier ☐																			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval																	
Description Work Order Deviation			Disposition																		
			Completed By																		
			Lead hand / Supervisor Approval Verification																		
			QC / QA Coordinator Approval																		

Container No: S122059

Part: D3391 - 025

Job No: 184463

Serial No/Batch: S122059

Revision: _____

Inspector: _____

Exp Date: _____

Instructions: Various STC's

FAULT CATEGORY

☐ Defect ☐ Rejected/Unqualified ☐ Incomplete/Unclear	☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center	☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence
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DART Aerospace Ltd.
 1270 Aberdeen Street
 Hawkesbury, ON K6A 1K7
 CANADA
 TEL.: 1 813 832-5200
 Email: sales@dartaero.com
 www.dartaerospace.com



Date: 10/28/18

marked "A" Only. 3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217 Wearplate Jig . *****Do Not Open To Finished Size***** 4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2 previously drilled aft wearplate holes. 5-Open wearplate holes to 0.297" and c'bore as per dwg D3391 6-Open up all float bag holes to 0.328" and c'sink as per Dwg D3391. 8- Scribe batch # on fwd end
 220 - 1- Instal spacers as per dwg D3391 A/R Magnabond 6398 Batch: exp. date : cure time 12hrs as per QSI0015 2- Grind crossbolts flush 3- Back drill using #9 drill 4- Touchup Magnabond 5- Debur
 235 - AND REALODINE AS PER PAR09-043
 240 - PRIME AS PER DWG AND QSI005 4.2.1.3.3 *200-1200x*
 260 - 1-Install inserts as per Dwg D3391 2-Install Aft Cap as per Dwg D3391 A/ R Sikaflex-241/-291 *5128386*
 Sikaflex expiry date: *19/03* 3- INSTALL WEARPLATES AS PER DWG
 290 - 5- Detail DD, open (5) forward wearplate holes 0.375", then use DT10247 and drill holes for nutplates and c'sink. 6-Open wearplate holes to 0.297" and c'bore as per dwg D3391. ***SIX FARTHEST AFT HOLES ONLY*** 7-Open up all float bag holes to 0.328" and c'sink as per Dwg D3391. 8-Debur 9- Scribe batch # on fwd end

M.U. 007075

B139427

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6014-090	Aluminum Extrusion	1 Ea (1 ea)	90-Start up Operation	
D3670-4-200	Bushing	4 Ea (4 ea)	220-Skidtubes	<i>5123086</i>
ALS4-1032-130	Rivnut	8 Ea (8 ea)	260-HandFinish	<i>5007279</i>
ALS4-1032-225	Rivnut	4 Ea (4 ea)	260-HandFinish	<i>5058138</i>
AN3C4A	Bolt	6 Ea (6 ea)	260-HandFinish	<i>5123449</i>
AN3C5A	Bolt	4 Ea (4 ea)	260-HandFinish	<i>5095214</i>
D2646	Aft Cap	1 Ea (1 ea)	260-HandFinish	<i>F165010</i>
D3672-1	Washer, Phenolic	2 Ea (2 ea)	260-HandFinish	<i>F164008</i>
D4095-047	Wearpad Aft	1 Ea (1 ea)	260-HandFinish	<i>5070710</i>
D4095-049	Wearpad Aft	1 Ea (1 ea)	260-HandFinish	<i>5003238</i>
MS20601-AD4W3	Rivet	12 Ea (12 ea)	260-HandFinish	<i>5092682</i>
MS20601-AD4W7	Rivet	8 Ea (8 ea)	260-HandFinish	<i>F-M137140</i>
MS21075L5	Nut Plate	10 Ea (10 ea)	260-HandFinish	<i>5093126</i>
NAS1149C0332R	Washer	10 Ea (10 ea)	260-HandFinish	<i>5130139</i>

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D6014-090	1	17	0
220-Skidtubes	D3670-4-200	4	43	0
260-HandFinish	ALS4-1032-130	8	12,051	0
	ALS4-1032-225	4	1,843	0
	AN3C4A	6	2,406	0
	AN3C5A	4	1,815	0
	D2646	1	66	0
	D3672-1	2	968	0
	D4095-047	1	21	0
	D4095-049	1	20	0
	MS20601-AD4W3	12	877	0
	MS20601-AD4W7	8	121	0
	MS21075L5	10	304	0
	NAS1149C0332R	10	4,227	0

Part Specifications

Specifications could not be found.

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DART AEROSPACE LTD		Work Order: 184463
Description: Float Skidtube (412)		Part Number: D3391-3
Inspection Dwg: D3391	Rev: J	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

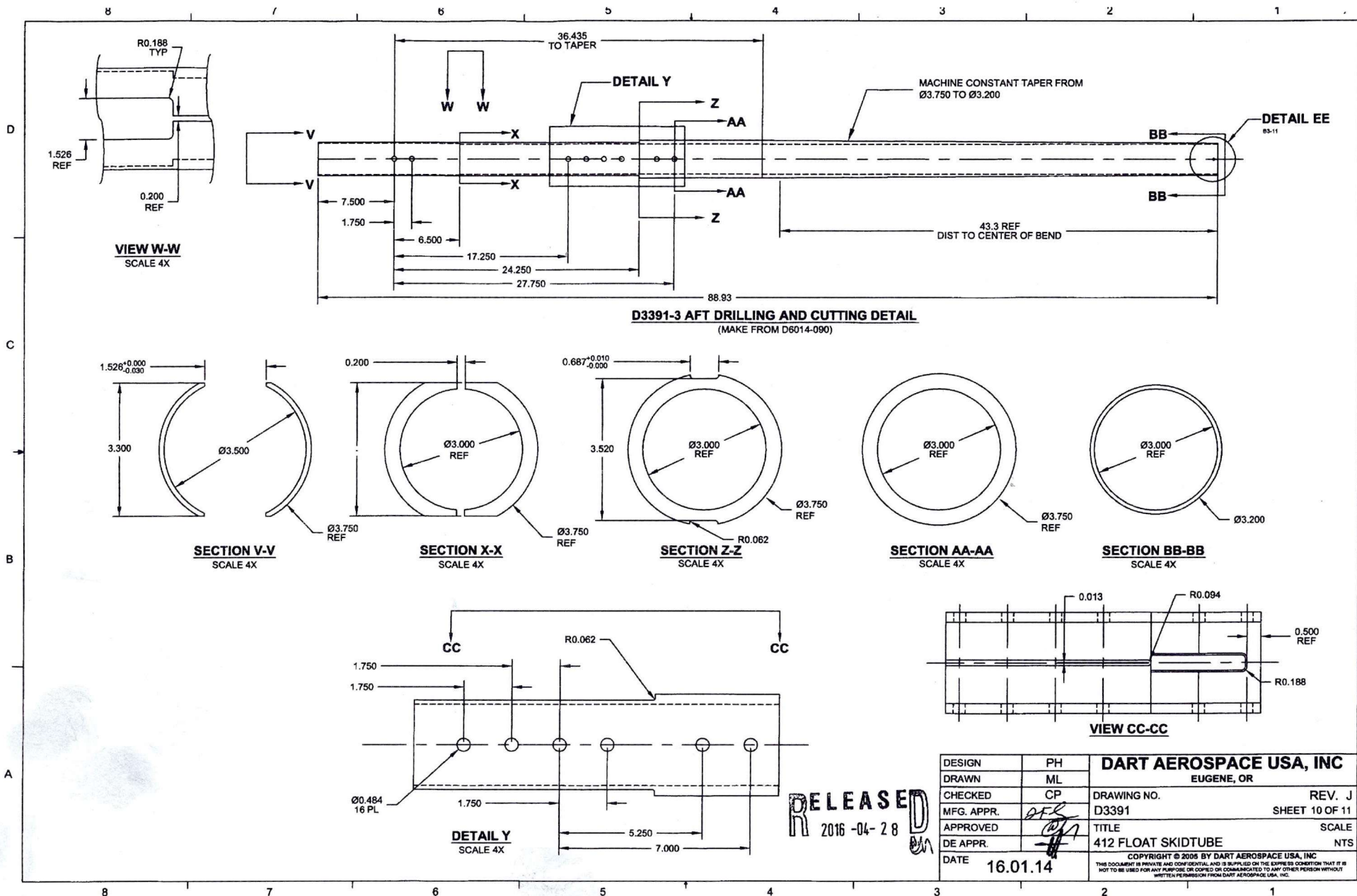
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010	14.000	✓		Tape	
3.500	+/-0.010	3.497	✓		CNC-08	
Ø3.200	+/-0.010	3.201	✓		CNC-05	
Ø3.750	+/-0.010	3.752	✓		CNC-05	
30° x 0.060 chamfer	+/-0.010	.070	✓		CNC-08	
88.93	+/-0.030	88.92	✓		Tape	

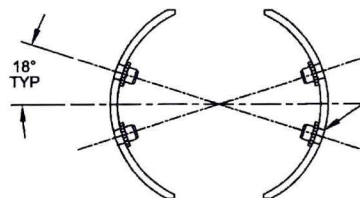
Measured by: MD	Date: 2018-10-25
Audited by: [Signature]	Date: 18/11/29

HAAS Section						
1.526	+0.000/-0.030	1.506	✓		Vern	
7.500	+/-0.010	7.4975	✓		Vern	
27.750	+/-0.010	27.750	✓		Dial	
31.750	+/-0.010	31.750	✓		Dial	
35.250	+/-0.010	35.250	✓		Dial	
3.300	+/-0.010	3.301	✓		Vern	
0.200	+/-0.010	0.202	✓		Vern	
3.520	+/-0.010	3.519	✓		M.M.	
0.687	+0.010/-0.000	0.689	✓		Vern	
R0.062	+/-0.010	0.062	✓		R.G.	
Ø0.484	+0.005/-0.001	0.485	✓		G.P.	

Measured by: [Signature]	Date: 18-11-28
Audited by: [Signature]	Date: 18/11/29

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	
H	11.06.21	Dimension 44.995 removed	KJ	
I	12.05.15	Dwg Rev updated	KJ	
J	12.05.23	Dimension updated	KJ	
K	12.10.15	88.93 dimension removed	KJ	
L	12.11.28	88.93 dimension added	KJ	
M	16.06.23	Dimensions updated per Rev J	KJ	



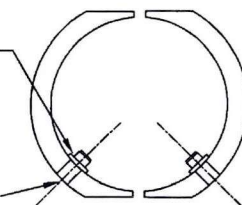


SECTION S-S D6-8,9
SCALE 5X

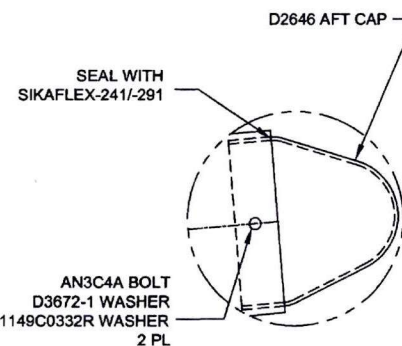
DRILL Ø0.391
CBORE Ø0.516 X 0.040 DEEP
INSTALL ALS4-428-165 INSERT
4 PL

USE DT8217 DRILL TEMPLATE
TO LOCATE HOLES AND OPEN
TO Ø0.375

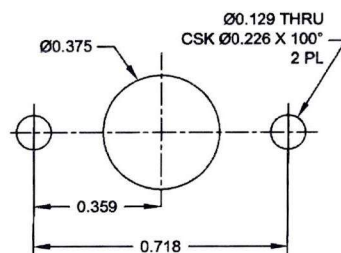
MS21075L5 NUTPLATE
REF



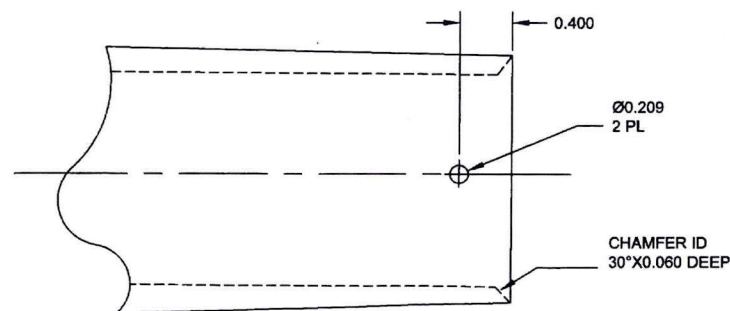
SECTION T-T D5-8,9
SCALE 5X
5 PL



DETAIL U D1-8,9
SCALE 5X



DRILLING DETAIL DD J
SCALE 10X
B7-8,9



DETAIL EE J
SCALE 2X
D1-11

NOTES:
1) USE INDUSTRY STANDARD NUT PLATE DRILL JIG IF REQUIRED.

RELEASED
2016-04-28

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	ML	EUGENE, OR	
CHECKED	CP	DRAWING NO.	REV. J
MFG. APPR.		D3391	SHEET 11 OF 11
APPROVED		TITLE	SCALE
DE APPR.		AFT TUBE ASSEMBLY	NTS
DATE	16.01.14	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC	



Dart Aerospace Ltd.
1270 Aberdeen St.
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K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO042028**

Supplier: ATE003-VC
Atelier Debosselage
358 Principale
Calumet
QC
J0V 1B0 Canada
Phone: 819 242 5633

PO No: PO042028
PO Date: 12/12/18
Due Date: 12/18/18
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Tsimiklis, ChrisoulaPhone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	177515	D350-636-011	1- PRIME AS PER DWG AND QSI 005 4.2 PRIMER PRC DESOTO 515X349 BATCH: _____ 2- PAINT WHITE AS PER DWG AND QSI 005 4.2 PAINT BATCH: _____	Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
2	186338	D350-636-016	AS350/355 - Skidtube - Float w/ Heavy-Duty Wearplates - RH : TC STC SH99-7 Issue 2, FAA STC SR00646SE 15/10/28, EASA STC EASA.10033942 11/02/21, BRAZIL 2009S05-01 09/05/08 1- PRIME AS PER DWG AND QSI 005 4.2 PRIMER PRC DESOTO 515X349 BATCH: _____ 2- PAINT WHITE AS PER DWG AND QSI 005 4.2 PAINT BATCH: _____	Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00



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PURCHASE ORDER

PO042028

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3	186804	D350-636-018	Skidtube RH, Run-on Landing, DART (Apical) Tri-Bag/Air Cruisers Float Comp. : TC STC SH99-7 Issue 2, FAA STC SR00646SE 15/10/28, EASA STC EASA.10033942 11/02/21, BRAZIL 2009S05-01 09/05/08 (Spray Paint / NDT Room), Spray Painting per QSI005 4.2 Issue P/O to Atelier Debosselage: _____ Spray Painting per QSI005 4.2 1- PRIME AS PER DWG AND QSI 005 4.2 PRIMER PRC DESOTO 515X349 BATCH: _____ 2- PAINT WHITE AS PER DWG AND QSI 005 4.2 PAINT BATCH: _____	Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
4	187142	D350-636-022	AS350/355 - Skidtube - Standard w/ Standard Wearplates - RH : TC STC SH99-7 Issue 2, FAA STC SR00646SE 15/10/28, EASA STC EASA.10033942 11/02/21, BRAZIL 2009S05-01 09/05/08 1- PRIME AS PER DWG AND QSI 005 4.2 PRIMER PRC DESOTO 515X349 BATCH: _____ 2- PAINT WHITE AS PER DWG AND QSI 005 4.2 PAINT BATCH: _____	Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
5	184463	D3391-025	Aft Tube Assembly : Various STC's PRIME AS PER DWG AND QSI005 4.2.1.3.3	Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$125.00/pcs	\$125.00



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PURCHASE ORDER

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Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
6	186337	D350-636-015	AS350/355 - Skidtube - Float w/ Heavy-Duty Wearplates - LH : TC STC SH99-7 Issue 2, FAA STC SR00646SE 15/10/28, EASA STC EASA.10033942 11/02/21, BRAZIL 2009S05-01 09/05/08 1- PRIME AS PER DWG AND QSI 005 4.2.1.3.3 PRIMER PRC DESOTO 515X349 BATCH: _____ 2- PAINT WHITE AS PER DWG AND QSI 005 4.2 PAINT BATCH: _____	Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
	185343			Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
Sub Total:							2	0	2		\$450.00
7	187138	D350-636-021	AS350/355 - Skidtube - Standard w/ Standard Wearplates - LH : TC STC SH99-7 Issue 2, FAA STC SR00646SE 15/10/28, EASA STC EASA.10033942 11/02/21, BRAZIL 2009S05-01 09/05/08 1- PRIME AS PER DWG AND QSI 005 4.2 PRIMER PRC DESOTO 515X349 BATCH: _____ 2- PAINT WHITE AS PER DWG AND QSI 005 4.2 PAINT BATCH: _____	Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
	187135			Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
	187137			Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
Sub Total:							3	0	3		\$675.00



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PURCHASE ORDER PO042028

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
8	186803	D350-636-017	Skidtube LH, Run-on Landing, DART (Apical) Tri-Bag/Air Cruisers Float Comp. : TC STC SH99-7 Issue 2, FAA STC SR00646SE 15/10/28, EASA STC EASA.10033942 11/02/21, BRAZIL 2009S05-01 09/05/08 ISSUE P/O: _____ Spray Painting per QSI005 4.2 1- PRIME AS PER DWG AND QSI 005 4.2 PRIMER PRC DESOTO 515X349 BATCH: _____ 2- PAINT WHITE AS PER DWG AND QSI 005 4.2 PAINT BATCH: _____ C OF C IS REQUIRED	Firmed	-	12/18/18	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00

EX DEC 17 2018

Grand Total: \$2,375.00

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 12/12/18 9:49 AM dart.tsimiklis.chrisoula